Transportation

A Resource Guide of the
2000-2020 Bryan Comprehensive Plan, City of Bryan, Texas

Transportation Planning

This Resource Guide describes the transportation element of the 2000-2020 Bryan Comprehensive Plan. The plan addresses the mobility needs for access and movement of people and goods in and through the City of Bryan and the City's Extraterritorial Jurisdiction (ETJ). Mobility includes all modes of transportation: pedestrians, bicycles, public transportation, streets and highways, railroads, and airports. The Transportation Resource Guide includes:

- Identification of Bryan's existing transportation system and current conditions;
- Analyses of thoroughfare system improvement needs;
- Development of goals and objectives; and,
- Recommendation of the future transportation plan including thoroughfares and bikeways.

Transportation planning is a continuous, cooperative and comprehensive process that involves local, state and federal agencies working jointly to identify and provide needed transportation system improvements. The Bryan/College Station Metropolitan Planning Organization (B/CS MPO) made up of public officials, is the regional cooperative organization responsible for regional transportation planning. The City of Bryan is a member of the B/CS MPO along with other local governmental entities and the Texas Department of Transportation (TxDOT).

The **Bryan Thoroughfare Plan** is the City of Bryan's master plan for thoroughfare system development. *The purpose of the Throughfare Plan is to ensure orderly and timely development of the Bryan area's street and highway system to serve mobility and access needs of the public.* It is a guide for securing needed rights-of-way and extending the network of streets, roads and highways within the City Limits and Extra-territorial Jurisdiction. The purpose of the Thoroughfare Plan is to ensure orderly and timely development of the Bryan area's street and highway system to serve mobility and access needs of the public.

The **City of Bryan Bikeway Plan** identifies the existing and proposed citywide network of on-street and off-street bicycle facilities linking neighborhoods, schools, parks, and other destinations.

Existing Transportation System

The existing highway and street network accommodates current travel demands and provides the basis for maintenance and future improvements to meet long-range needs for thoroughfare system development. Physical conditions of the existing roadway system and characteristics of travel patterns are identified based upon available information compiled by the City of Bryan B/CS MPO, and TxDOT. Other transportation facilities and services are also

identified.

Existing Roadway Network

The network of Federal, State, and local highways, roads, and streets comprises the surface transportation system in the Bryan area. The existing roadway network includes Federal and State Highways, Farm-to-Market roads, local streets, and traffic control devices.

Federal and State Highways

Many thoroughfares in the Bryan area have Federal (US), State Highway (SH), and Farm to Market (FM) highway designations. Bryan-College Station area highways that are designated as part of the National Highway System (NHS) include SH 6, SH 21, and SH 47. Connectivity with the National Highway System is vital for continued growth of area's economy and international trade.

Existing major highways in the Bryan–College Station area include:

- US 190/SH 21 extends east from SH 6 to Madisonville;
- SH 6 runs north-south connecting to US 290 on the south and US 190 on the north;
- SH 21 extends east-west across Bryan, linking to IH 35 and IH 45;
- SH 30 extends east from SH 6
- SH 47 connects SH 21 west from the TAMU Riverside Campus to FM 60 near Easterwood Airport;
- Other routes include FM 60, FM 158, FM 974, FM 1179, FM 2223, and FM 2818.

Arterial Streets

Major arterial streets in Bryan's street network include the following roadways:

- Texas Avenue (Business 6);
- College Avenue;
- Villa Maria Street; and,
- Briarcrest.

Motor Freight

Motor freight carriers are an important economic and transportation component of the community. Truck routes, freight distribution/warehouse uses, and intermodal facilities are important components for goods movement.

Railroads

The Union Pacific Railroad is the Class 1 railroad company that operates a freight mainline through Bryan-College Station between Houston and Dallas-Fort Worth. The Union Pacific enters Bryan from the south through College Station. The tracks diverge in Bryan with one branch continuing north to Waco and the other continuing northwest through Hearne. A concrete loading/unloading facility is located in Bryan. Several private sidings are associated with industrial rail customers. The Union Pacific operates an average of 14 trains in a 24-hour period beginning at Villa Maria Street in Bryan and traveling south. An average of 19 trains per 24-hour period begin at Villa Maria Street and travel north. The average length of each train is 6,000 feet. Numerous points of auto-train and pedestrian-train conflict exist

within the City of Bryan.

Potential relocation of the existing railroad alignment, either outside the Bryan/College Station urban area or depressed below grade, has been studied in the past and may be considered again in the future. Additional grade separations and grade crossing safety improvements are needed to relieve traffic conflicts along the exiting railroad alignment.

Public Transportation

Intercity bus service is provided by Greyhound at the downtown bus depot. Service includes two northbound and three southbound buses daily to Houston, Dallas, and other cities. Intracity bus transit service is provided by the Brazos Transit District and the Texas A&M University Shuttle Bus Service.

The Brazos Transit System is a division of the Brazos Valley Community Action Agency. Brazos Transit provides fixed route urban transit service to the Bryan/College Station area and paratransit and rural transit service on a demand basis. Eight fixed routes comprise the Interurban Trolley System serving the Bryan/College Station area. Hours of operation begin at 6:00 A.M. and end at 6:00 P.M., Monday through Friday. No service is provided on Saturday or Sunday. Interurban trolley fares are 50 cents for adults and 25 cents for elderly, children and disabled patrons. Paratransit rates are $1.00 per ride. All fixed route buses are ADA accessible.

The TAMU Shuttle Bus Service serves students, faculty, staff, and visitors and includes intracampus and off-campus shuttle bus service as well as paratransit services. Off-campus service includes nine fixed routes extending radially from the A&M campus. Regular service hours are from 7:00 A.M. through 10:00 P.M., Monday through Thursday, and 7:00 A.M. through 9:00 P.M. on Friday. Door-to-door paratransit service is provided to ADA qualified individuals who cannot use the regular scheduled shuttle bus service.

Taxi service is provided by local taxi companies throughout the Bryan/College Station area, including service to area airports and neighboring cities. Airport limousine service is available between Bryan and metropolitan airports in Houston and Austin.

Airports

Air transport service is available at two local airports and also at metropolitan airports in Houston and Austin.

Easterwood Airport, located south of Bryan at the intersection of FM 60 and FM 2818, is the primary commercial service airport under the National Plan of Integrated Airport Systems (NPIAS). Easterwood Airport is owned and operated by the Texas A&M University System. Scheduled commercial passenger and freight service is provided to Houston Bush Intercontinental and Dallas/Fort Worth Airports. The primary runway is 7,000 feet in length and is served by precision and non-precision approaches. The secondary runway is 5,160 feet in length and has non-precision approaches. The third runway is 5,150 feet in length and is used for day visual approaches only. An air traffic control tower is operated by the Federal Aviation Administration. The William A. McKenzie Terminal serves commercial air carrier passengers. American Eagle and Atlantic Southeast Airlines operate flights connecting to Dallas-Fort Worth and Continental Express serves Bush Houston Intercontinental Airport.

Coulter Field, located northeast of Bryan on the south side of SH 21, is a general aviation airport serving private and business aircraft, flight instruction and air charter. Coulter Field also serves a contract carrier for UPS with five cargo flights per week. The airport is owned by the City of Bryan and operated by a private Fixed Base Operator. The primary runway is 4,000 feet in length.

Bicycles and Pedestrians

Bryan has a sizeable population of residents using the bicycle for both transportation and recreation. Trip generators for bicycle use include the university; Bush Presidential Library; historic downtown Bryan; Carnegie Library; retail, commercial and office centers; elementary and high schools; and local parks and recreation/entertainment facilities. Existing bikeways include 17 miles of trails at Bryan Utilities Lake. Bicycles may be used on city streets and area highways except for access controlled highways such as SH 6. The City of Bryan has great potential for bicycle transportation with its sizeable bicycling population, active bicycle advocacy groups, and current progress made toward developing a bikeway network.

Pedestrian facilities include sidewalks, crosswalks, trails, and pedestrian bridges linking neighborhoods, shopping areas, downtown, commercial corridors, industrial areas, schools, and parks/recreation/entertainment areas. Pedestrian walks in downtown Bryan include accommodation for wheelchairs in accordance with the Americans With Disabilities Act (ADA) requirements.

Transportation Issues

Issues relating to transportation were identified by citizens who participated in the Community Forum workshops during preparation of the plan. The identified transportation issues included:

- Improved arterial roadway access is needed for the following areas:
  - Downtown (via Beck St, Palasota, 28th St., and others),
  - Improved east-west travel corridors needed for traffic movement across the city (Villa Maria, Leonard/Grossbeck, and Beck Street);
- Public transportation service should be improved to increase ridership.
- Adequate funding resources are needed to ensure that street maintenance and repair will be sufficient to improve and maintain existing roadway paving.
- Traffic conflicts between roadways and the railroads need improvement to reduce delay and improve safety. Additional grade separated railroad/roadway crossings and grade crossing safety devices are needed. Relocation of through train traffic outside the urban area is needed.
- On-street parking on arterial streets with relatively high traffic volumes in peak periods reduces available traffic carrying capacity and adds to congestion and delay.
- There is a general lack of bike and pedestrian facilities including on-street bikeways, off-road trails and paths, and crossings for pedestrians and bicycles.

Goals, Objectives, and Actions

The Comprehensive Plan Advisory Committee (CPAC) and input received from citizens at Community Forums formed the basis for development of transportation goals and objectives. Also utilized were goals from previous plans including *Bryan Forward*, *Brazos Vision 2020*, and the *1993 Bryan Comprehensive Plan*.

Goal: ***Provide and maintain a multi-modal transportation system that will safely, efficiently and economically accommodate the existing and future mobility needs for people and goods traveling within and through the Bryan-College Station area; promote efficient land use and development; and minimize adverse environmental and socioeconomic impacts.***

Objective 1: Ensure interagency cooperation and coordination through the Metropolitan Planning Organization (MPO) composed of Brazos County, the City of Bryan, the City of College Station, the Texas Department of Transportation, Texas A&M University, and Brazos Transit.

Objective 2: Plan and develop a unified thoroughfare system based upon functional classification and providing a balanced and well-maintained network of freeways/expressways, arterials, collectors, and local streets.

Action 1: Provide three major north-south arterial streets traversing Bryan and College Station which will have the following characteristics:

- Provide for the flow of traffic with speeds of 45 to 55 mph;
- Provide for limited access to adjacent property;
- Provide for grade separation at major east-west arterial street intersections and railroad crossings.

Action 2: Provide a fourth arterial street (Texas Avenue) which will provide immediate access to historic downtown Bryan with a flow of 45 mph made possible by synchronized traffic signals and turn bays.

Action 3: Adopt and implement the Wellborn Road corridor plan.

Action 4: Optimize traffic flow (through traffic light timing) in order to encourage commuter traffic off of Texas Avenue and onto the north and south thoroughfares and synchronize traffic signals on all major E-W arterials and Texas Avenue.

Action 5: Provide timely installation of “synchronize timed” traffic signals at intersections meeting signal warrants.

Action 6: Construct the Villa Maria Grade Separation to eliminate the existing at-grade railroad crossing at the intersection of West Villa Maria and Finfeather Road.

Action 7: Adopt and implement a plan to transition FM 2818 to a limited access highway and eliminate all left turns, eliminating at-grade railroad crossings at Wellborn Road.

Action 8: Investigate the need to establish a policy designating thoroughfare routings for hazardous materials transport.

Action 9: Develop, adopt and implement a South College Avenue Corridor Plan.

Action 10: Extend Beck Street to FM 2818 and potentially to SH 47 to provide improved E-W access to historic downtown Bryan.

Action 11: Improve Briarcrest/29th Street between SH 30 and SH 47 to alleviate traffic congestion and improve E-W mobility along this major business corridor.

Action12: In cooperation with Brazos County and the City of College Station, work with the Bryan/College Station MPO to develop and adopt a Hazardous Materials Transportation Plan for the Bryan-College Station area.

Objective 3: Urban land use and development should include adequate off-street parking needed to accommodate generated parking demands.

Action 1: Require new off-street parking to avoid incursion into walkways and street rights-of-way.

Action 2: Arterial streets with severe traffic service deficiencies should be investigated for elimination of existing on-street parking to improve traffic capacity and reduce congestion.

Action 3: Develop and adopt a residential parking permit program for neighborhoods that are experiencing incursion of on-street parking due to spillover from adjacent high demand areas.

Objective 4: Provide and encourage utilization of alternative modes of transportation including transit, bicycles and pedestrians.

Action 1: Increase coordination between the City and Brazos Transit for effective transit service planning and ridership promotion in the City of Bryan.

Action 2: Install transit shelters at major traffic generators.

Action 3: Study the feasibility of providing park-and-ride lots located on the periphery of the Bryan - College Station urbanized area adjacent to SH-6 and FM-2818.

Action 4: Encourage provision of adequate taxi and limousine service to supplement transit service.

Action 5: Compile and implement public involvement strategies to achieve a consensus on proposed thoroughfare improvement alternatives.

Action 6: Educate the public regarding transportation issues, including public awareness of and adherence to traffic laws for all automobile drivers, bicyclists and pedestrians.

Action 7: Educate the public on rights and responsibilities of roadway users.

Objective 5: Develop a Pedestrian Improvements Plan, which establishes prioritized pedestrian walkway improvements for future construction. This plan should also address Americans with Disabilities Act (ADA) compliance. Recommended potential improvements include the following:

Action 1: Identify areas that are characterized by high pedestrian activity and evaluate the feasibility of creating "pedestrian zones" where pedestrians are provided with quality facilities and protected from interference from impeding vehicular traffic.

Action 2: Undertake a pedestrian study which identifies the needs of the walking public, centers of pedestrian activity, and presence of or absence of pedestrian-related infrastructure. Improve access for citizens with disabilities.

Action 3: Review and update current City ordinances to ensure that new developments provide sidewalks and bicycle accommodations with direct connections to residential, commercial, and recreational areas and to transit stops.

Action 4: Installation of continuous sidewalks as well as pedestrian crosswalks and pedestrian activated signals along major arterials at :quarter-mile intervals.

Action 5: Link residential neighborhoods with bikeways and pedestrian walkways.

Action 6: Install sidewalks along both sides of minor and major arteries and on both sides of collectors marked crosswalks at intersections.

Objective 6: Develop a Comprehensive Bikeway Plan which establishes prioritized bikeway improvements for future construction, such as the following potential improvements:

Action 1: Install 14'-16' wide curb lanes with share-the-road signs and pavement symbols at intervals.

Action 2: Loop detectors for turn lane signals should be upgraded to include capability for detecting bicycles.

Action 3: Encourage provision of bicycle parking where car parking is required at a ratio of 1:5, where appropriate.

Action 4: Utilize any abandoned railroad right-of-way that becomes available for Rails-to-Trails improvements.

Action 5: Install, improve, and maintain sidewalks and designated bicycle facilities, especially in and around schools, bus stops, and commercial areas and workplaces throughout the city in accordance with Pedestrian Improvement Plan and Comprehensive Bikeway Plan.

Action 6: Design and retrofit appropriate roadways to accommodate bicyclists or pedestrians including bike routes and bike lanes, as appropriate.

Objective 7: Develop and promote commercial and general aviation facilities and services that meet existing and future air transportation needs and minimize adverse impact on airport environs.

Action 1: Update, maintain and enforce height hazard and compatible land use zoning ordinances for Coulter Field and Easterwood Airport.

Action 2: Provide facilities and services for smaller general aviation and corporate aircraft, to include expanded ramp parking and small aircraft hangars.

Action 3: Provide a relaxed, yet professional, atmosphere for the recreational pilot. Continue to encourage recreational aviation facilities and services, such as soaring, skydiving, ultra-lights, and gyrocopters.

Objective 8: Consider the need for a new joint regional commercial service airport serving the Bryan – College Station area developed and managed by a regional airport authority.

Action 1: In cooperation with Brazos County and the City of College Station, consider forming an Advisory Council which can tap community awareness for both area airports.

Action 2: Investigate and consider creation of an airport authority by referendum and legislative action to plan, fund, and govern both community airports.

Action 3: Promote the installation of a FAA radar approach control serving area airports. This facility would greatly improve the instrument flight rules capacity for Easterwood and Coulter Field Airports.

Action 4: Determine feasibility of improved air service.

Action 5: Continue to promote frequently scheduled air carrier service between Easterwood and Dallas-Forth Worth, and Bush Houston Intercontinental Airports.

Action 6: Promote scheduled air carrier service to Austin Bergstrom Airport.

Objective 9: Provide and promote rail transportation to meet existing and future needs for freight and passenger rail service, including railroad safety measures to minimize conflicts with other transportation modes and adjacent land uses.

Action 1: Eliminate at-grade crossings on major thoroughfares; meanwhile, assure that effective warning signals are functional.

Action 2: Assist in the implementation of educational traffic safety programs that have been created by other agencies.

Action 3: Address safety hazards at railway/highway intersections.

Bryan Thoroughfare Plan

The **Bryan Thoroughfare Plan** shown in **Figure 1** identifies the existing and proposed thoroughfare system of expressways, arterials and collector streets. Bryan's thoroughfare system is comprised of existing and planned streets and highways, which require wider or new rights-of-way and may ultimately be developed as two-lane or multi-lane roadways with various cross sections.

The Thoroughfare Plan shows approximate alignments for planned thoroughfares that should be considered in platting of subdivisions, right-of-way dedication, and construction of major roadways. The Thoroughfare Plan does not show future local streets because these streets function principally to provide access and their future alignments may vary depending upon development plans. Local street alignments should be determined by the City and landowners as part of planning for development.

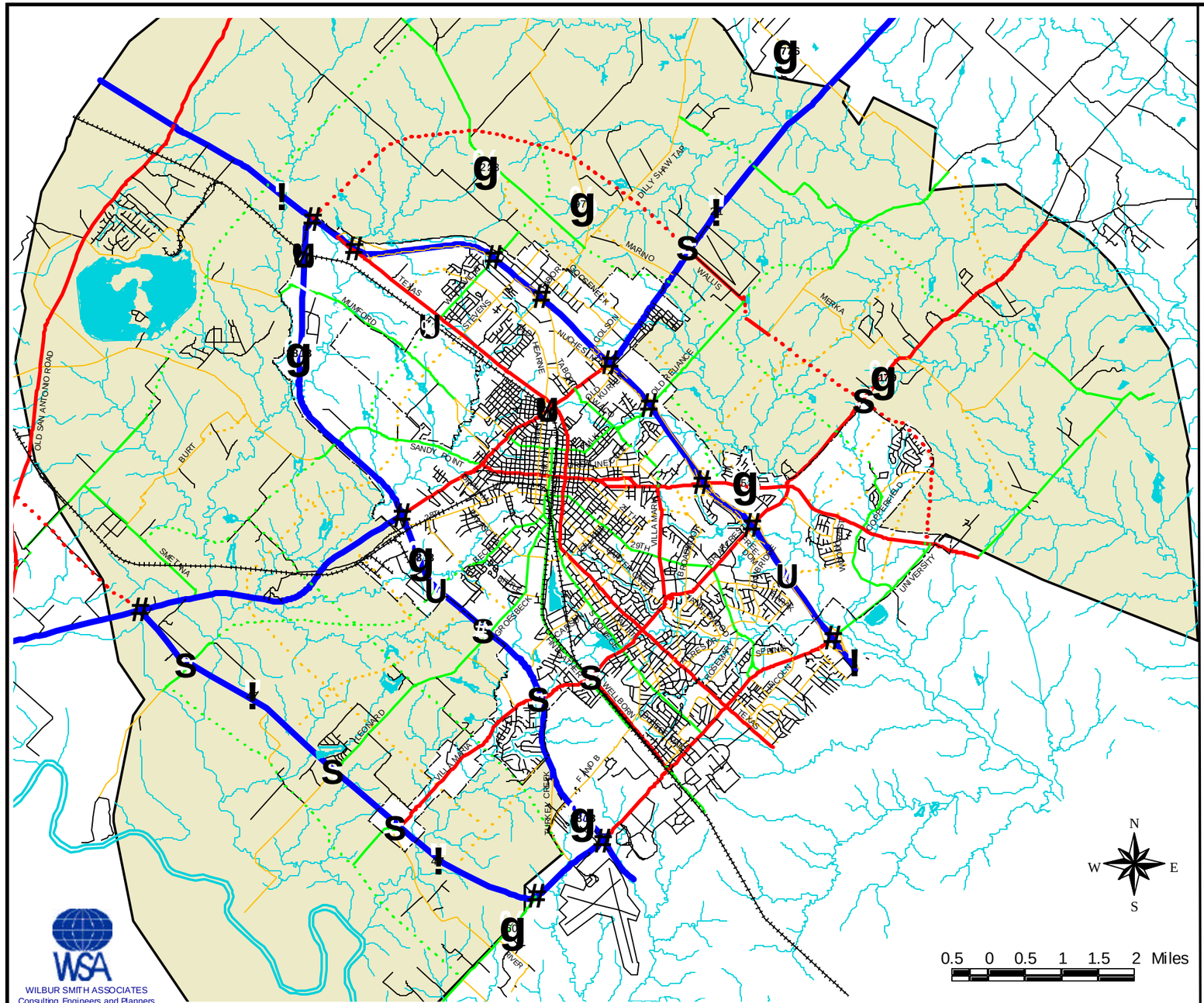
Implementation of thoroughfare system improvements occurs over time as the city grows. ***The fact that a planned thoroughfare is shown in the plan does not represent a commitment to a specific time frame for construction, nor that the City will build the roadway improvement.***

Review by the City of preliminary plans and final plats for proposed subdivisions in accordance with the Subdivision Ordinance includes consideration of compliance with the Thoroughfare Plan, in order to ensure consistency and availability of sufficient right-of-way for the general roadway alignments shown in the plan.

Functional classes of thoroughfares are based upon the roles served by different classes of streets and highways. Criteria considered in defining the various functional classes are listed in **Table 1 – Criteria for Functional Classification of Thoroughfares**.

Access Management is the process used by the City and Texas Department of Transportation to protect and preserve the functional capacity of the thoroughfare system. Access management includes the following:

- **Intersection Spacing** – Where practical, arterials should be spaced at approximately one mile intervals and collectors located between arterials.
- **Median Openings** – Median openings should coincide with traffic signal timing points or points where turning movements will not interfere with opposing traffic. Median openings should be consolidated to concentrate flow at levels that can be handled efficiently and minimize conflict points.
- **Driveway Design** – Driveway design corresponds to vehicle characteristics (turning radii). New single family residential driveways should not connect to arterial or collector streets. Non-residential driveway spacing should be increased on arterials where volumes and speeds are higher. Design criteria for residential and non-residential access driveways should be utilized and enforced.



2000-2020
Bryan Comprehensive Plan

THE CITY OF BRYAN TEXAS

Figure 1

Thoroughfare plan

Legend

	Existing	Proposed
FREEWAY		
MAJOR ARTERIAL		
MINOR ARTERIAL		
COLLECTOR		
LOCAL STREET		
Grade Separation	%	U
Interchanges	#	S
Corporate Limits		
Extraterritorial Jurisdiction		
River, Lakes, Streams		
RAILroads		

Note:
The Thoroughfare Plan shows general alignments and corridors for existing and planned principal and minor arterials and collectors. The plan is a guide for general transportation planning and right-of-way acquisition. Proposed alignments shown on the plan are subject to change based upon design and implementation considerations.

TABLE 1
CRITERIA FOR FUNCTIONAL CLASSIFICATION OF THOROUGHFARES

Criterion	Expressway/ Freeway	Principal Arterial	Minor Arterial	Collector	Local Street
Functional Role	Entirely through movement with no direct access to property	Mobility is primary, Access is secondary; Connects Freeways and Arterials	Connect Freeways, Principal Arterials and lower classes; Access is secondary	Collects traffic; Connect Arterials to Local Streets; also land access	Access is primary; Little through movement
Roadway Continuity	Intercity, regional, and interstate	Connect Freeways to lower classes; Connect major activity centers	Connect Freeways and Principal Arterials to lower classes	Connect Arterials to local streets; May extend across Arterials	Discontinuous Connect to Collectors
Roadway Length	Usually more than 5 miles long	Usually more than 5 miles long	Usually more than 3 miles long	Varies from about 1/2 mile to 2 miles	Generally less than 1 mile long
Traffic Volumes	40,000 VPD and greater	20,000 to 60,000 VPD	5,000 to 30,000 VPD	1,000 to 15,000 VPD	100 to 5,000 VPD
Desirable Spacing	5 miles or more between Freeways	2 miles or more between Principal Arterials	Generally 1/2 to 2 miles between Minor Arterials	Generally 1/4 to 1/2 miles between Collectors	Varies with block length, min. >125 ft.
Posted Speed	55 to 65 mph	40 to 55 mph	30 to 45 mph	30 mph or less	20 to 30 mph
Access	Controlled Access; grade separated interchanges and service roads	Intersect with Freeways, Arterials, Collectors and Local Streets; Restricted driveway access	Intersect with Freeways, Arterials, Collectors, and Local Streets, Limited driveway access	Intersect with Arterials and Local Streets; Driveways permitted	Intersect with Collectors and Arterials; Driveways permitted
On-Street Parking	Prohibited	Restricted	Restricted	Normally permitted	Permitted
Community	Define	Define	Define and	Internal and	Internal

Relationship	neighborhood boundaries	neighborhood boundaries	traverse neighborhood boundaries	traverses boundaries	

Source: Wilbur Smith Associates

Bikeway Plan

Bicycle routes, lanes and trails provide links between attractions and destinations throughout the city. Many streets and roads in Bryan carry low volumes of low speed traffic and are capable of accommodating bicycle traffic. All public streets and roads, except access controlled freeways, can be used by bicycles, according to State Law. A plan for proposed bikeway system development is shown in **Figure 2 – Bikeway Plan**. A system of on-street bikeways and off-street trails should be developed, linking neighborhoods, parks, schools, and other attractions. Pedestrian and bicycle facilities should be constructed in compliance with requirements of the Americans with Disabilities Act (ADA). The bikeway system serves both recreational and functional transportation purposes.

The Bikeway Plan shows on-street bikeways located along low volume, low speed local streets and minor thoroughfares. Off-street trails are shown along drainage ways and rail and utility corridors. On-street bikeways should be developed as bike routes or bike lanes depending upon existing conditions and design considerations. Bikeway signage and lane markings (where appropriate) should be included.

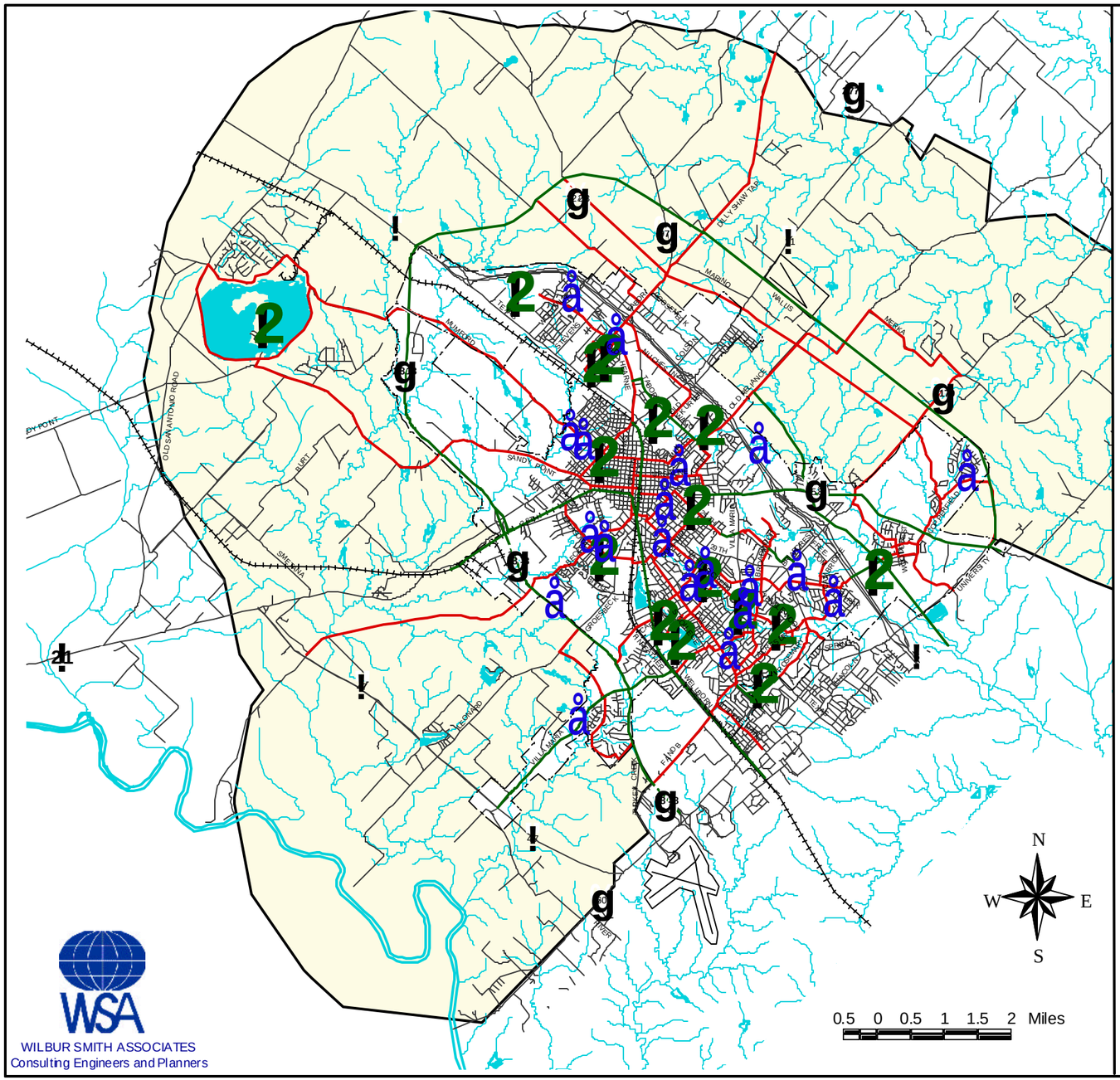
General alignments shown in the Bikeway Master Plan are subject to change based upon further planning and design. Typical cross sections for on-street bikeways and off-street trails are illustrated in **Figure 3 - Bikeway Cross Sections**.

Planning and design for bikeways should conform to the 1991 *Guide for the Development of Bicycle Facilities* by the American Association of State and Highway and Transportation Officials (AASHTO). Pedestrian and bicycle considerations should be incorporated into planning and design policies, standards and guidelines.

Bicycle storage is essential to encourage use of bicycles to make trips. Bicycle parking racks should be conveniently provided at all public buildings. Private developers should be encouraged to provide bicycle parking.

Effective enforcement entails citing of pedestrian and bicyclist violations, as well as infractions of motor vehicle operators. Enhancing the safety of bicycling and walking will have the most success if enforcement, design, education, and promotion efforts are coordinated.

The City of Bryan should work with the Texas Department of Transportation to identify funding opportunities for implementation of bicycle and pedestrian improvements shown in the Bikeway Master Plan. The City and TxDOT should work in coordination to achieve the implementation of planned bicycle and pedestrian facilities along State Highways, Farm to Market Roads and other State maintained roadways. Local resources should be focused on implementing the lower cost measures to accommodate bicyclists and pedestrians, including signing of bicycle routes, designating shoulder lanes, striping bike lanes, and intersection treatments.



2000-2020
Bryan Comprehensive Plan

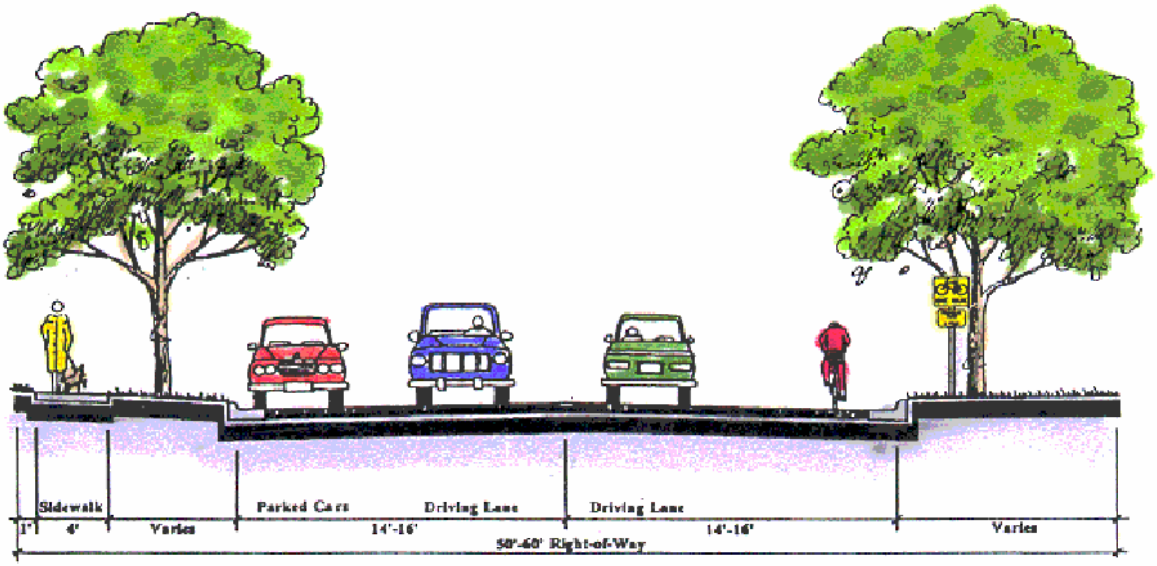
Figure 2

Bikeway Plan

Legend

- On Street Bikeways (Bike Routes or Bike Lanes)
- Off Street Bikeways (Bike & Jog or Rails-to-Trails)
- Corporate Limits
- Extraterritorial Jurisdiction
- River, Lakes, Streams
- RAILroads
- Parks
- Schools

Note:
This map of the proposed bikeway network is a planning tool for use in the development of a bikeway system. Many of the bike lanes and trails may not currently exist and may be along right-of-way that is currently not accessible to the public.



Typical On-Street Bikeway Cross Section

Typical Off-street Bike-and-Jog Trail Cross Section

Figure 5-8